

The four Tasmanian records of the Earth Cress *Geococcus pusillus* J. Drumm. ex Harv.

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Abstract

The four Tasmanian specimens of the Earth Cress *Geococcus pusillus* J. Drumm. ex Harv. were collected on islands in Bass Strait. The nineteenth century record was made on King Island at the western end of the Strait. Its scanty details are set out below. The twentieth century specimens were collected at the Furneaux Group, in the south-eastern quarter of the Strait, on Mile, Mount Chappelle and Little Chalky Islands. The habitat of these later records is detailed. The status of the species, under the Tasmanian *Threatened Species Protection Act 1995*, is discussed and is recommended to be advanced from 'rare' to 'endangered'. (*The Victorian Naturalist* 126 (5), 2009, 180–182)

Keywords: Earth Cress; Bass Strait; King Island; Flinders Island, Furneaux Group

A brief description

The Earth Cress *Geococcus pusillus* is a small herb, with leaves usually to 10 cm long, in the family Brassicaceae. Its flowers have four white petals. Its leaves and habit are shown clearly in the illustration (Fig. 1). Its most distinctive feature is its pedicels which range from horizontal to descending. The latter can press the fruits into the soil and, when that happens, the herb is unmistakable.

The nineteenth century record

King Island

The Earth Cress was collected on King Island in 1876; the month is not given. The label attributes the specimen to EN Spong. Edward Nash Spong was the superintendent of the Cape Wickham Lighthouse near the island's northern end. Mueller (1882) presented a list of specimens obtained from Spong in — it seems — 1881, but noted that they were collected by Spong's young sons. So the Earth Cress also might have been found by them. The label gives no indication of the site of the collection. However, it might have been in the 4000 acre (1600 hectare) Lighthouse Reserve. The species was not recorded during the expedition of the Field Naturalists Club of Victoria to the island in 1887. This lasted from the 2nd to the 20th of November and its members covered a considerable part of the island. This included walking through about three quarters of the island's coastal zone. They also crossed the northern end of the island and made more than 20 rambles inland from near the coast. Just over 180 native plant specimens, including small herbs,

were collected (Campbell *et al.* 1888). It seems likely that the Earth Cress would have been taken had it been noticed.

Specimen: 1876, King's Island, E[dward] N[ash] Spong, National Herbarium of New South Wales, NSW 20560.

The twentieth century records

Note that in this section the exotic species are marked by asterisks.

Mount Chappelle Island

This island is 323.26 ha in area and rises to 198 m. It is granite, largely overlain by lime sand. It was damaged considerably in the late 1950s and early 1960s when leased for the first time for grazing. However the leaseholder's slashing left a broken coastal belt of Barilla *Atriplex cinerea*.

I landed on the west coast in August 1973 and walked up a path used by seabirds in the terra rossa soil formed from the lime sand. The Barilla formed about a 70% cover with lower Box *Rhagodia candolleana* and Green Vine *Tetragonia implexicoma* growing amongst and through it. An occasional Boxthorn *Lycium ferocissimum* rose above the Barilla. The herbs in the gap were the Common Ice-plant *Mesembryanthemum crystallinum*, Forest Pellitory *Parietaria debilis*, Common Chickweed *Stellaria media*, an immature Cudweed (probably a *Euchiton* sp.), an immature Mallow *Malva* sp., Garden Nettle *Urtica urens*, an immature Slender Thistle *Carduus* sp. and at least one exotic grass. As most of the herbs were weeds, the Earth Cress was noted as 'a weed I do not know' and its plants were not counted.

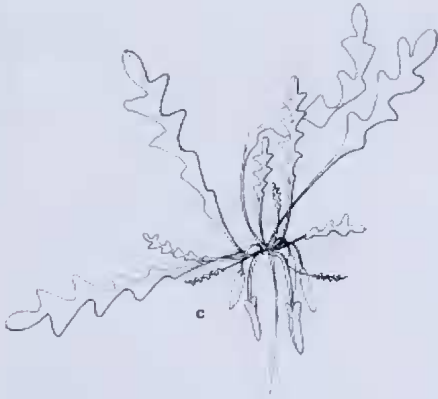


Fig. 1. Earth Cress *Geococcus pusillus* J. Drumm. ex Harv. From Walsh NG and Entwistle TJ (eds) (1996) *Flora of Victoria*. Vol 3, pp 456. (Inkata Press: Melbourne)

Specimen: 12.viii.1973. Just in from the west coast of Mount Chappelle Island, John Whinray M1 136, National Herbarium of Victoria, MEL 530245.

Mile Island

This islet, of just 4.05 ha, rises to only about 12 metres. It is granite largely overlain by recent sand and there is a consolidated later dune towards the southern end. Much of its sandy surface is used by burrowing seabirds. The Earth Cress was part of the final vegetation in petering shallow soil on granite of the islet's east coast. While this receives seepage from above, the strip dries fully during the drier months. In September 1973 the soil carried Spreading Crassula *Crassula decumbens*, Sea Pearlwort *Sagina maritima*, Forest Pellitory *Parietaria debilis*, Slender Cotula *Cotula vulgaris* var. *australasica*, Leek Lily *Bulbine* sp. and the Earth Cress. The plants of the latter were not counted but twenty-eight were collected. About ten visits have been made to the islet and much of its surface has been tramped over. However, the Earth Cress has not been noticed elsewhere on it.

Specimen: 9.ix.1973. East coast of Mile Island. John Whinray M1 357, MEL 535235; A606, State Herbarium of South Australia AD 97616213; C325, Australian National Herbarium CANB 487072. Note that, despite the different collecting numbers, the holdings at AD and CANB are duplicates of the specimen at MEL.

Little Chalky Island

This islet, of 5-15 ha, rises to about 12 m. It is granite and much of its surface is a sandy veneer. Its southern inlet has some bedded calcarenite formed from lime sand that blew in from the west. The south-eastern spit, and the eastern coast to about 50 m north, are sand derived from granite.

In October 1990 I chanced on a tiny open area amongst Box *Rhagodia candolleana* about eight metres in from the sandy east coast. The site was about 45 cm above high water level. The Earth Cress grew with Forest Pellitory *Parietaria debilis* in a mat of Annual Meadow-grass *Poa annua*. Although the pellitories were counted, the Earth Cress plants were not. However the patch was — from memory — only about one metre square and so the number could not have been high.

This visit was at least my eighteenth to the islet and much of it had been examined carefully on numerous occasions.

Specimen: 3.x.1990. Near the east coast of Little Chalky Island. John Whinray 9 193, MEL 2111652.

The false record for Flinders Island

The Earth Cress is listed for Flinders Island by Harris *et al.* (2001). According to Dr Wendy Potts (2007 pers. comm. August 14) of the Threatened Species Section in Hobart, this is based on a listing in a local visitors' guide (Edgecombe, 1986). Harris *et al.* do not include this source in their bibliography. The guide uses a 'List of plants indigenous to Flinders Island' specially compiled by the late Dr JH Willis, formerly of the National Herbarium of Victoria. However Willis' manuscript 'Bass Strait: Census of Flora' does not mention the species (Willis, no date). This census covers the period 1801 to 1967 and draws on a comprehensive range of sources, including specimens held at the National Herbarium of Victoria (MEL) and the Tasmanian Herbarium (HO), Willis' records made during his visits to Flinders, Cape Barren and King Islands, and a number of published and unpublished lists. There are no specimens from Flinders Island at either MEL or HO. I surmise that Willis, in penning his list for Flinders Island, drew on one of my records from the adjacent island and islets.

The mistaken record for North-west Tasmania

Hewson (1982) treated the Earth Cress in volume eight of the *Flora of Australia*. She gave its range as 'Widespread in semi-arid regions of WA, SA, NSW, Vic; also King Island and in NW Tas.' This can be read as either the north-western part of the Tasmanian mainland or the islands just off its north-western corner. There are no specimens from either area. However, specimens had reached MEL well before she dealt with the species and their labels plainly attribute them to islands in the Furneaux Group. In reply to my enquiry she thanked me for clarifying the matter but offered no explanation for the mistake. It seems likely that it resulted from the confusion of the Furneaux Group with Hunters Group which is off the north-western corner of the Tasmanian mainland. Her entry should be amended to '...also King Island and three islands in the Furneaux Group.'

Discussion

As the Earth Cress has not been found on King Island since 1876, the herb should be classed as extinct there.

The three 20th century records were small and it seems likely that the populations totalled fewer than 100 plants. They occupied less than 20 m². Their finding was the result of much local research. Between 1972 and 1980 I travelled some 6500 nautical miles, using a 14ft (4.2m) boat, in visits to islands and islets in the Furneaux Group and two of the Swan Isles. From 1985 to 1988 I made 205 landings on 53 islets and reefs in the same group. Many of these were done by travelling about 1500 nautical miles in a slightly larger boat. There have also been numerous visits, from 1964 up to the present, to islands from Hogan's Group near the Victoria-Tasmania border down to Swan Island just off the north-eastern corner of the Tasmanian mainland. These were made using charter

boats, fishing boats, mail boats, dinghies and even light aircraft. So I consider that the paucity of records accurately reflects the local scarcity of the Earth Cress.

The first record was made 36 years ago and the last 19 years back. The taxon is scheduled, under the Tasmanian *Threatened Species Protection Act 1995*, as 'rare'. Given the small number of plants found, and their very limited range, it seems appropriate that the Earth Cress should be re-scheduled as 'endangered'.

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Richard Sutherland interrupted his fishing and dropped me at Little Chalky Island in 1990. GWG Goode's small boat was used for numerous visits to Little Chalky, Mile, Mount Chappelle and thirty other local islands between 1972 and 1980. Helen Vonow, Catherine Gallagher, Karen Wilson and Jo Palmer supplied the accession numbers for the specimens at AD, MEL, NSW and CANB respectively.

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